Talk I: Representing Qubits with cold atoms
Talk II:Quantum computation and BEC

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Recent techniques in atomic physics, including laser cooling, magnetic and optical trapping and optical lattices have created novel quantum systems including Bose Einstein Condensates (BEC). I'll review theoretical proposals to use these systems as a quantum computer, outline the major decoherence mechanisms and discuss their applicability. The theoretical proposal generally fall into two groups, those trying to represent the qubit with a single atom and those trying to exploit the macroscopic coherence of BEC. I'll review both approaches and list their advantages/weaknesses.